

CLAIMS

1. An apparatus for testing samples of a solid material contained in a reactor tube,
said apparatus comprising a holder for said tube, a flow module for generating a
5 carrier fluid flow containing a probe through said tube positioned in said holder, a
magazine for additional tubes, and a conveyor for replacing said tube positioned
in said holder with an additional tube from said magazine.
2. The apparatus of claim 1 wherein said solid material comprises a catalyst or an
10 adsorbent.
3. The apparatus of claim 1 wherein said reactor tube, said holder for said tube, said
magazine for additional tubes, and said conveyor for replacing said tube posi-
15 tioned in said holder with an additional tube from said magazine
comprises an automated thermal desorption unit.
4. The apparatus of claim 1 wherein the flow module further comprises an injector
for injecting a probe and/or additional carrier fluid into the carrier fluid flow.
- 20 5. The apparatus of claim 4 wherein the injector is positioned relatively close to the
holder.
6. The apparatus of claim 1 wherein said flow module comprises a feedline for
establishing fluid communication with a tube that is placed into the holder and
25 wherein the cross-sectional area of the lumen of the feed line is substantially
smaller than the cross-sectional area of the lumen of the tube.
7. The apparatus of claim 1 wherein means are provided for accurately controlling
the temperature of said tube in said holder.

8. The apparatus of claim 1 which further comprises an analysis module for at least partially determining the composition of the reaction products exiting said reactor tube.

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9. A method of testing a plurality of samples of a solid material contained in a reactor tube by means of an apparatus comprising a holder for a tube, a flow module for generating a carrier fluid flow containing a probe and a magazine for additional tubes, which method comprises placing said tube in said holder, generating a carrier fluid flow through said tube, and replacing said tube with an additional tube from said magazine.

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10. The method of claim 9 wherein said probe and/or additional carrier fluid is injected into the carrier fluid flow relatively close to said holder.

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11. The method of claim 9 wherein said reactor tube, said holder, and said magazine comprises an automated thermal desorption unit.